Installation Guide

CSG SIP Communications Gateway (CSG-500/544/580)

ATTENTION: READ THIS FIRST!

For more detailed installation, configuration, programming, and operating instructions, refer to the *CSG SIP Communications Gateway* Instruction Manual available on-line at www.amx.com.

FIG. 1 CSG SIP Communications Gateway (displaying CSG-544)

Overview

The CSG SIP Communications Gateway (FIG. 1) is a stand alone Private Branch Exchange (PBX) which runs a version of Asterisk. The CSG can function not only as a PBX, but also as VoIP ATA, or VoIP gateway. It has eight analog ports that can be configured (via modules) as Foreign Exchange Office (FXO) or Foreign Exchange Station (FXS) ports.

The CSG enables you to transform an intercom-enabled Modero Touch Panel into a full-featured IP phone. With the CSG and an intercom-enabled Modero Touch Panel you can make and receive local, long distance, and international phone calls, and have access to phone features like call waiting, caller ID, call forwarding, call queuing, and voice mail. The CSG supports AMX Session Initiated Protocol (SIP)-enabled touch panels, such as the MVP-8400i, NXD-1000Vi, and NXD-700Vi, as well as 3rd party IP phones.

Specifications

CSG Specifications	
Dimensions	1.74" x 11.45" x 5.44" (4.41 cm x 29.09 cm x 13.82 cm)
Weight	2.25 lbs. (1.02 kg)
Enclosure	Metal with black matte finish
Power Requirements	Constant current draw: 2.6 A @ 12 VDC
Memory	• 8MB on board serial Flash memory • 64MB 16-bit parallel SDRAM
Certifications	FCC (Class A), CE, IEC60950, and RoHS
Operating/ Storage Environment	• Operating Temperature: 0° C (32° F) to 40° C (104° F) • Operating Humidity: 5% to 85% RH Non-Condensing • Storage Temperature: -20° C (-4° F) to 70° C (158° F) • Storage Humidity: 0% to 85% RH Non-Condensing
Front Panel Components:	
Power LED	Indicates whether the unit is turned on and receiving power.
Network LED	Indicates whether a network cable is connected and the speed of the network.
IP Phones LEDs	Indicates whether the corresponding link is connected and the speed of the link.
Analog LEDs	Indicates whether the analog port is installed and the type of port (FXO/FXS) installed. (Not available on all models.)
Rear Panel Components:	
Power connector	5.1mm OD, 2.1mm pin, 12V 3.0A center positive
Configuration Reset Switch	Resets the current configuration to the factory default when pressed continuously during the boot process.
Console port	1 RJ45 port for console (craft) port serial control
Network port	1 RJ45 10/100baseT port for a general (WAN) connection
IP Phones ports	4 RJ45 10/100baseT ports for IP phone connections
Analog ports	• 8 RJ11 ports: 4 for FXO and 4 for FXS connections (CSG-544 only) • 8 RJ11 ports for FXO connections (CSG-580 only) ***Note**: The CSG-500 does not use analog ports.*

CSG Specifications (continued)	
Included Accessories	• PSN3.0, Power Supply, 3.0A, 12.0CVD (**FG423-31**) • CSG SIP Communications Gateway Installation Guide (**93-2182-01**) • 2 Surface mounting brackets (**62-2182-04**) • 4 #4-40 X .250 PPH screws (**80-0112**)
Other AMX Equipment	• DIN Rail Mounting Bracket (**FG532-06**)

Installing the Hardware

CAUTION!

To reduce the risk of fire, use only No. 26 AWG or larger telecommunication wiring for network connections.

1. Connect an Ethernet cable to the Network port.
2. Connect the provided power supply to the unit's DC connector. The unit immediately receives power once you connect a power source to it.
3. When the unit completes the boot process, the left-most eight LEDs indicate how the analog ports are configured. A red light indicates the port is FXO, and a green light indicates the port is FXS. If the light for a port is off, the port is not installed.

***Note:** The analog port configuration is selected when you purchase your CSG unit.*

4. Connect telephones to the analog ports that are configured as FXS ports and connect phone lines to the analog ports that are configured as FXO ports. If you are using the CSG-500, you can skip this step.

WARNING!

If you are using the CSG-544, do NOT connect analog ports 1-4 to a phone line. Since both the FXS port and the phone line supply power, the hardware could sustain damage. This damage is not covered under the AMX standard warranty.

Instructions for Wall Mounting

1. Select the area to mount the CSG unit. The unit should be mounted at or below eye level to properly view the LEDs.
2. Line up one of the surface mounting brackets with the two holes on one side of the CSG. Install two #4-40 X .250 PPH screws into the holes in the bracket to secure the bracket to the CSG.
3. Repeat step 2 to attach the second bracket to the other side of the unit.
4. Affix one screw to the wall. Leave approximately 1/4-inch of the screw protruding from the wall to allow the head of the screw to slide into the settings on the mounting bracket, mounting the unit to the wall.
5. Repeat step 4 to attach the second bracket to the wall.

Understanding the LEDs

There are 14 LEDs on the front panel of the CSG. The eight LEDs corresponding to the analog ports on the rear panel indicate the type of interface installed. The following table explains the definition of each LED and its color representation:

LED Definitions		
LED	**Color**	**Description**
Power	Blue (pulsing)	On when the unit boots up after the bootload process has completed. The LED pulses at a rate which is proportional to the BlackFin processor load.
Network	Off	No line is connected or the interface is inactive.
	Green (flashing)	Link is up at 100Mbps. LED flashes at 1/10 second intervals as traffic is detected.
	Red (flashing)	Link is up at 10Mbps. LED flashes at 1/10 second intervals as traffic is detected.
IP Phones (4 ports)	Off	No line is connected or the interface is inactive.
	Green (flashing)	Link is up at 100Mbps. LED flashes at 1/10 second intervals as traffic is detected.
	Red (flashing)	Link is up at 10Mbps. LED flashes at 1/10 second intervals as traffic is detected.

LED Definitions (continued)		
Analog (8 ports)	Off	No analog port is installed in the corresponding port.
	Green (solid)	Port is configured for FXS operation and is enabled. An analog telephone may be connected to this port.
	Green (flashing)	Telephone is ringing.
	Green (slow blinking)	Telephone is in use.
	Red (solid)	Port is configured for FXO operation and is enabled. A telephone line may be connected to this port.
	Red (flashing)	Telephone line is ringing.
	Red (slow blinking)	Telephone line is in use.

Setting Up Your System

The CSG comes with a user interface framework which gives you the ability to configure it through an easy to use interface. To access the interface, you will need the IP address your CSG server is using. Once you have the IP address, you can configure your CSG via a web browser.

The user interface included as part of the CSG implementation provided with the CSG gives you the ability to set up a telephone system without the need to use command line configuration. The user interface opens on the main menu, which gives you the ability to add features or further modify an existing configurations. The following sections provide information about procedures you may want to perform when you are getting started.

Logging on to the Server

In the address field of a web browser, enter the IP address of your network. If your computer is connected to the LAN IP phone port, the default IP address is http://192.168.69.1. To log on to the system, enter the following username and password:

- Username: **admin**
- Password: **1988**

Changing Your Network Configuration

DHCP is automatically enabled for Wide-Area Networks (WAN) by default. If you need to change your network configuration—like set a static IP address, for example—the Networking Configuration page enables you to make any necessary changes. Follow these steps to change your network configuration:

1. Select **Network | Main** from the **System** tab.
2. Enter the host name for your server.
3. Click the **WAN Network** tab. You can use the options on this tab to establish the settings that enable you to connect to the Internet, or to an internal, private network.
4. Ensure the **DHCP** check box is checked.

Note: *If you have difficulty obtaining an IP address dynamically, clear the DHCP check box and specify the IP address, subnet, gateway, and DNS settings. This information should be available from your network administrator or Internet Service Provider (ISP).*

5. Click the **IP Phones** tab. You can use the options on this tab to establish settings to access your CSG.
6. Enter the IP address, subnet, or any other appropriate information necessary to access your CSG.
7. Click the **Timezones** tab.
8. Select a time zone from the provided drop-down combo box.
9. Click **Accept**.

Setting Up Your Touch Panel to Work with Your CSG

Follow these steps to configure your touch panel to work with the CSG:

1. From the main Setup page on your touch panel, press **Protected Setup**. The Protected Setup page opens.
2. Press **Other Settings**. A slide out menu appears.
3. Press **SIP**. The SIP Settings page opens (FIG. 2).

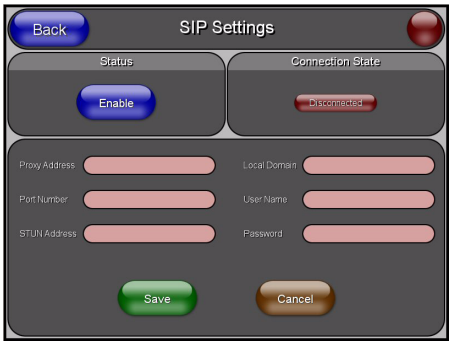

FIG. 2 SIP Settings page

4. In the **Proxy Address** field, enter the IP address or DNS name of the server you want to access. The IP address depends on whether you connect the touch panel to one of the IP Phone ports or through the LAN with the CSG.
5. In the **Port Number** field, enter the port number of the server you want to access. The default port number is 5060.
6. In the **User Name** field, enter a user name you can use for authentication to the server. Normally, the user name is the same as the phone number assigned to the extension you are using.
7. In the **Password** field, enter the password for the user name.
8. Press **Enable** to have your panel read the configuration and attempt to connect to the proxy server.
9. Press **Save**.
10. Press **Back** to return to the previous page.

Compatible Devices

The following list describes all SIP-enabled touch panels that are compatible with the CSG.

- MVP-8400i
- NXD-700Vi
- NXD-1000Vi

The firmware for these panels must be up-to-date to use SIP.

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